

REMARKS/ARGUMENTS

Reconsideration of this application in light of the above amendments and following comments is courteously solicited.

Claim 12 has been cancelled thereby rendering the claim objection raised on Page 2 of the examiner's action moot.

New independent claim 19 has been drafted so as to overcome the examiner's rejection under 35 U.S.C. 112, first paragraph as set forth on Page 2 of the examiner's action.

Claim 19 has been drafted so as to overcome the examiner's rejection over 35 U.S.C. 112, second paragraph as set forth on Page 3 of the examiner's action.

Claim 19 has been amended so as to define over Lee '151, Beltran '196, and/or Spitsberg '814 either taken alone or in combination under either 35 U.S.C. 102 or 35 U.S.C. 103.

Initially it should be noted that originally filed dependent claims 6 and 7 were not rejected over the prior art reference to Lee '151. As the subject matter of dependent claim 7 as originally filed is now incorporated into new independent claim 19, it is submitted that claim 19 patentably defines over the Lee '151 patent.

It is submitted that newly presented independent claim 19 patentably defines over the combination of Beltran of '196 in view of Spitsberg '814 under 35 U.S.C. 103 for the reasons set forth hereinbelow.

The examiner is correct in stating that Beltran teaches a thermal barrier coating comprising a first layer of YSZ and a second layer YSZ having a porosity of 10 to 20 % by volume. Beltran, however, does not a silicon based substrate as claimed. The examiner relies on the secondary reference to Spitsberg '814 for the teachings of a thermal barrier coating system including a zirconia layer deposited on a silicon containing substrate. It is respectfully submitted that the rejection as stated by the

examiner is untenable with regard to new independent claim 19. Initially it should be noted that independent claim 19 specifically sets forth the composition of the EBC layer and that composition does not include YSZ. The velocity barrier layer of claim 19 does include YSZ. The reason for the foregoing is that YSZ (yttria stabilized zirconia) are, in and of themselves not suitable coatings for silicon based substrates because of the thermal mismatch between the substrate and the YSZ coating. This is clear even from the teachings of the secondary reference to Spitsberg. Spitsberg specifically indicates that if YSZ is to be used a thermal mismatch must be compensated for and this is done by dispersing a second phase in the YSZ. Therefore, even if the teachings of Beltran and Spitsberg can be combined as proposed by the examiner, the results would be an EBC layer between the velocity barrier layer and the silicon based substrate which comprises YSZ having a dispersed secondary phase therein. Such a structure does not anticipate or render obvious the subject matter of independent claim 19 which does not include any yttria stabilized zirconia. (YSZ) as would be required by the combination of references. Accordingly, it is submitted that claim 19 is nonobvious over the prior art.

In light of the foregoing, it is submitted that claim 19 and the claims which depend therefrom patentably define over the art of record and an early indication of same is respectfully requested.

An earnest and thorough attempt has been made by the undersigned to resolve the outstanding issues in this case and place same in condition for allowance. If the Examiner has any questions or feels that a telephone or personal interview would be helpful in resolving any outstanding issues which remain in this application after consideration of this amendment, the

Examiner is courteously invited to telephone the undersigned and the same would be gratefully appreciated.

It is submitted that the claims as amended herein patentably define over the art relied on by the Examiner and early allowance of same is courteously solicited.

If any fees are required in connection with this case, it is respectfully requested that they be charged to Deposit Account No. 21-0279.

Respectfully submitted,
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By 

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I, Rachel Piscitelli, hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:
Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313" on May 9, 2006.

